

REMARKS

Claims 1-23 are pending in the subject application with entry of this paper.

Claims 1-23 stand rejected.

Drawings

Applicant has amended the drawings to correct the informalities identified by the Examiner. Attached as Exhibit A is a replacement sheet and annotated marked-up drawing for Figure 1. No new matter has been added. Reconsideration and withdrawal of the objections to the drawings are respectfully solicited.

Specification

Applicant has amended the specification to correct the informalities identified by the Examiner. No new matter has been added. Reconsideration and withdrawal of the objections to the specification are respectfully solicited.

Claim Objections

At paragraph 5 of the Action, the Office objected to Claims 3, 9, 16 and 19. Applicant has amended Claims 3, 9, 16 and 19 to correct the informalities identified by the Examiner. Reconsideration and withdrawal of the claim objections are respectfully solicited.

Rejection under 35 U.S.C. § 112

At paragraph 6 of the Action, the Office rejected Claims 4, 6, 16 and 23 under 35 U.S.C. § 112, second paragraph for being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Applicant has amended Claims 6, 16 and 23 to correct the informalities identified by the

Examiner. With regard to Claim 4, merely because the claim recites the two terms “substantially” and “similar” does not render the claim indefinite. *See Seattle Box Co. v. Industrial Crating & Packing, Inc.*, 731 F.2d 818 (Fed. Cir. 1984); MPEP § 2173.05(b). Further, there is no requirement in the law or in the MPEP for a claim to define “substantially similar” or require a specification to provide a standard for ascertaining the requisite degree of “substantially similar.” Rather, “acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification.” *See* MPEP § 2173.05(b). At paragraph [0041] of the published application, Applicant has provided sufficient description and support for this claim element:

Network design measurements can also be taken to avoid creation of no location areas. WLS can be deployed at non-base station sites as location only measurement units that are geographically positioned to provide broad coverage, such as high altitude sites with broad antenna elevation patterns. *The WLS can be patterned to provide coverage similar to the host wireless network and thus any call initiated within the network coverage area would be within the coverage area of the WLS network.*

See paragraph [0041] (emphasis supplied). In light of the support provided by the specification, Applicant submits that one of ordinary skill in the art would understand the metes and bounds of the respective element in Claim 4. Reconsideration and withdrawal of the rejection of Claims 4, 6, 16 and 23 are respectfully solicited.

Rejection under 35 U.S.C. § 102(b)

At paragraph 9, spanning pages 6-14 of the Action, the Office improperly rejected Claims 1, 4, 6, 9-11, 15, 17 and 19-22 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,973,643 to Hawkes. It appears that the rejection is premised upon a

misunderstanding of what Hawkes fairly discloses or upon a mischaracterization of the claimed subject matter. Applicant submits that Hawkes fails to disclose each and every element of Claims 1, 4, 6, 9-11, 15, 17 and 19-22 and respectfully requests reconsideration and withdrawal of the rejection thereof.

1. Background

Independent Claims 1, 4, 6, 9, 17 and 19 each require a **wireless communications system including or having a sparse deployment of wireless location sensors**. As discussed in the instant application at paragraphs [0013]-[0015], the claimed subject matter provides wireless location sensors (WLSs) into a subset of the base station sites, *i.e.*, there are fewer WLSs than there are base stations (a sparse network deployment). Prior art network overlay geolocation systems deploy WLSs (or Location Measurement Units (LMUs)) at virtually all base station sites to achieve a desired location accuracy. One effect of a sparse network deployment is the occurrence of “no location areas”. These “no location areas” are those areas in which a minimum number of WLSs cannot detect or measure an attribute of a signal such that the geolocation system cannot estimate a location. As the Office is aware, mobile appliances are power controlled by a wireless network. Therefore, when a mobile appliance moves close to a base station site, the required transmit power for an acceptable communications link is reduced to a small value. In the event that the base station serving the mobile appliance does not have WLS (due to the sparse deployment), then there is no WLS to “hear” the mobile appliance at the serving site, and the neighboring site WLS units may not be able to hear the mobile appliance because of the low transmit power of the mobile appliance.

2. Hawkes

In contrast, Hawkes discloses a conventional geolocation system acknowledged by Applicant where a location sensor is associated with each base station in the communication system. Indeed, each and every embodiment disclosed and described by Hawkes includes a mobile location sensor associated with each cellular base station whether the mobile location sensor is (a) physically co-located with its respective cellular base station, or (b) not physically co-located with its respective cellular base station but functionally attached thereto with appropriate receiving antennas and network connections located with the sensor. *See* Fig. 1, col. 5, lines 18-25 of Hawkes. This disclosure is in stark contrast to the sparse network deployment of WLSs defined in the present application.

Furthermore, the Office's interpretation of "sparse" as "spaced out, at different locations" (*see* Office Action p. 8, line 5) is inconsistent with Applicant's definition of "sparse" as plainly stated in the application at paragraphs [0013]-[0015]. Therefore, the Office's interpretation of "sparse" is wholly inapplicable for determining the scope of the claims in the instant application. There clearly is no disclosure in Hawkes of a sparse network deployment, and such silence cannot properly provide support for such an element under 35 U.S.C. §§ 102 or 103.

As the Office is undoubtedly aware, during patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification."

See MPEP §2111 (emphasis supplied). In *Phillips*, the Federal Circuit explicitly enumerated this standard:

The Patent and Trademark Office (“PTO”) determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction “*in light of the specification as it would be interpreted by one of ordinary skill in the art.*” *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must “conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.”

415 F.3d. 1303, 1316 (Fed. Cir. 2005) (emphasis supplied). This broadest reasonable interpretation of the claims must be consistent with the interpretation that those skilled in the art would reach. *In re Cortright*, 165 F.3d 1353, 1359 (Fed. Cir. 1999). Therefore, the Office’s “broadest reasonable interpretation” of Applicant’s claim language must comport with Applicant’s specification.

At paragraphs [0013] through [0015] of the published application, Applicant provides a description of a sparse network deployment. In view of Applicant’s claim language as reasonably interpreted, Hawkes fails to disclose, teach or suggest this claimed subject matter. This is further supported by the fact that, as discussed throughout the instant application, a sparse network deployment necessarily results in the existence of “no location areas” which complicates the process for geolocating a mobile appliance sited in such a “no location area”. However, nowhere in Hawkes is there any discussion of the “no location area” phenomenon or how to locate a mobile appliance in a “no location area”. Therefore, it is plainly evident that Hawkes is not applicable to a system having sparse network deployment of WLSs.

Certainly, Hawkes discloses combining different location techniques such as time-difference-of-arrival and angle-of-arrival, with measurements of signal strength, Doppler frequency shift, chirp, multipath presence, and other signal attributes at multiple receiving stations to accurately estimate a location of a mobile appliance operating within a cellular system. *See* Col. 3, lines 38-44. Hawkes is generally directed to an error reduction technique to provide accurate location information to mitigate the effects of co-channel interference, multipath propagation, and low received signal strength.

For example, Hawkes describes a search and queue process that probes a mobile appliance on the forward voice channel causing it to transmit on the reverse voice channel at a different frequency, at a higher transmit power, or with a digital order confirmation message to assist in the location operation. If a call is not in progress, the system of Hawkes will probe the mobile appliance on the forward control channel causing the appliance to transmit a page response on the reverse control channel. *See* Figs. 2-3, Col. 7, line 14 – Col. 8, line 51. This search and queue process is then employed to locate mobile appliances (using one or more location techniques identified above) utilizing existing antennas of cellular base stations. *See* Col. 3, lines 14-25.

3. Claims 1, 4, 6, 9-11, 15, 17 and 19-22

Independent Claims 1, 4, 6, 9, 17 and 19 each require a **wireless communications system including a sparse deployment of wireless location sensors**. As discussed above, Hawkes is silent with regard to at least this element in each of these claims, and Applicant respectfully requests reconsideration and withdrawal of the rejection of independent Claims 1, 4, 6, 9, 17 and 19.

Claims 10-11, 15 and 20-22 are ultimately dependent upon independent Claims 9 and 19. Independent Claims 9 and 19 are in condition for allowance. By virtue of their dependency and without regard for the additional patentable elements contained therein, reconsideration and withdrawal of the rejection of Claims 10-11, 15 and 20-22 are hereby solicited.

Rejections under 35 U.S.C. § 103(a)

1. Claim 2

At paragraph 12 of the Action, the Office improperly rejected Claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Hawkes in view of Duffett-Smith. Without addressing the merits of the rejection, Claim 2 is dependent upon independent Claim 1. Independent Claim 1 is in condition for allowance. By virtue of its dependency and without regard for the additional patentable elements contained therein, reconsideration and withdrawal of the rejection of Claim 2 are hereby solicited.

2. Claim 3

At paragraph 13 of the Action, the Office improperly rejected Claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Hawkes in view of Carlson. Similar to independent Claims 1, 4, 6, 9, 17 and 19, Claim 3 also requires a **wireless communications system including a sparse deployment of wireless location sensors.**

As discussed above, Hawkes is silent with regard to at least this element, and Applicant submits that Carlson fails to supplement this deficiency in Hawkes. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of independent Claim

3.

3. Claim 5

At paragraph 14 of the Action, the Office improperly rejected Claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Hawkes in view of Stilp. Without addressing the merits of the rejection, Claim 5 is dependent upon independent Claim 4. Independent Claim 4 is in condition for allowance. By virtue of its dependency and without regard for the additional patentable elements contained therein, reconsideration and withdrawal of the rejection of Claim 5 are hereby solicited.

4. Claims 7-8, 12, 14 and 18

At paragraph 15 of the Action, the Office improperly rejected Claims 7-8, 12, 14 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Hawkes in view of Anderson. Without addressing the merits of the rejection, Claims 7-8, Claims 12, 14 and Claim 18 are dependent upon independent Claims 6, 9 and 17, respectively. Independent Claims 6, 9 and 17 are in condition for allowance. By virtue of its dependency and without regard for the additional patentable elements contained therein, reconsideration and withdrawal of the rejection of Claims 7-8, 12, 14 and 18 are hereby solicited.

5. Claim 13

At paragraph 16 of the Action, the Office improperly rejected Claim 13 under 35 U.S.C. § 103(a) as being unpatentable over Hawkes in view of Dunn. Without addressing the merits of the rejection, Claim 13 is dependent upon independent Claim 12. Independent Claim 12 is in condition for allowance. By virtue of its dependency and without regard for the additional patentable elements contained therein, reconsideration and withdrawal of the rejection of Claim 13 are hereby solicited.

6. Claim 23

At paragraph 17 of the Action, the Office improperly rejected Claim 23 under 35 U.S.C. § 103(a) as being unpatentable over Hawkes in view of Carlson and Duffett-Smith.

Claim 23 recites, *inter alia*:

In a wireless communication system having a set of base stations for communication with a mobile appliance, ***the set of base stations having a first subset of base stations having co-located wireless location sensors and second subset of base stations without a co-located wireless location sensor***, a method of locating a mobile appliance served by one base station in the set of base stations comprising:

receiving a location request;

determining the subset of the one base station... * * *

...if the one base station is a member of the second sub set;

selecting one or more steps from the group comprising... * * *

...determining the location of the mobile appliance based at least in part on the one or more steps.

(emphasis supplied).

It is clear that independent Claim 23, rather than specifically stating a “sparse network deployment” claims such a sparse network deployment in terms of set/subsets of base stations. The claim further requires the geolocation of a mobile appliance in such a network. As discussed above, Hawkes is silent with regard to at least this element, and Applicant submits that both Carlson and Duffett-Smith fail to supplement this deficiency in Hawkes (and the Office has not asserted otherwise). Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of independent Claim 23.

CONCLUSION

Applicant believes that the present application is in condition for allowance and, as such, it is earnestly requested that Claims 1-23 be allowed to issue in a U.S. Patent.

If the Examiner believes that an in-person or telephonic interview with the Applicant's representatives will expedite the prosecution of the subject patent application, the Examiner is invited to contact the undersigned agents of record.

The Office is requested and hereby authorized to charge the appropriate extension-of-time fees against **Deposit Account No. 04-1679** to Duane Morris LLP.

/mcc/

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EXHIBIT A

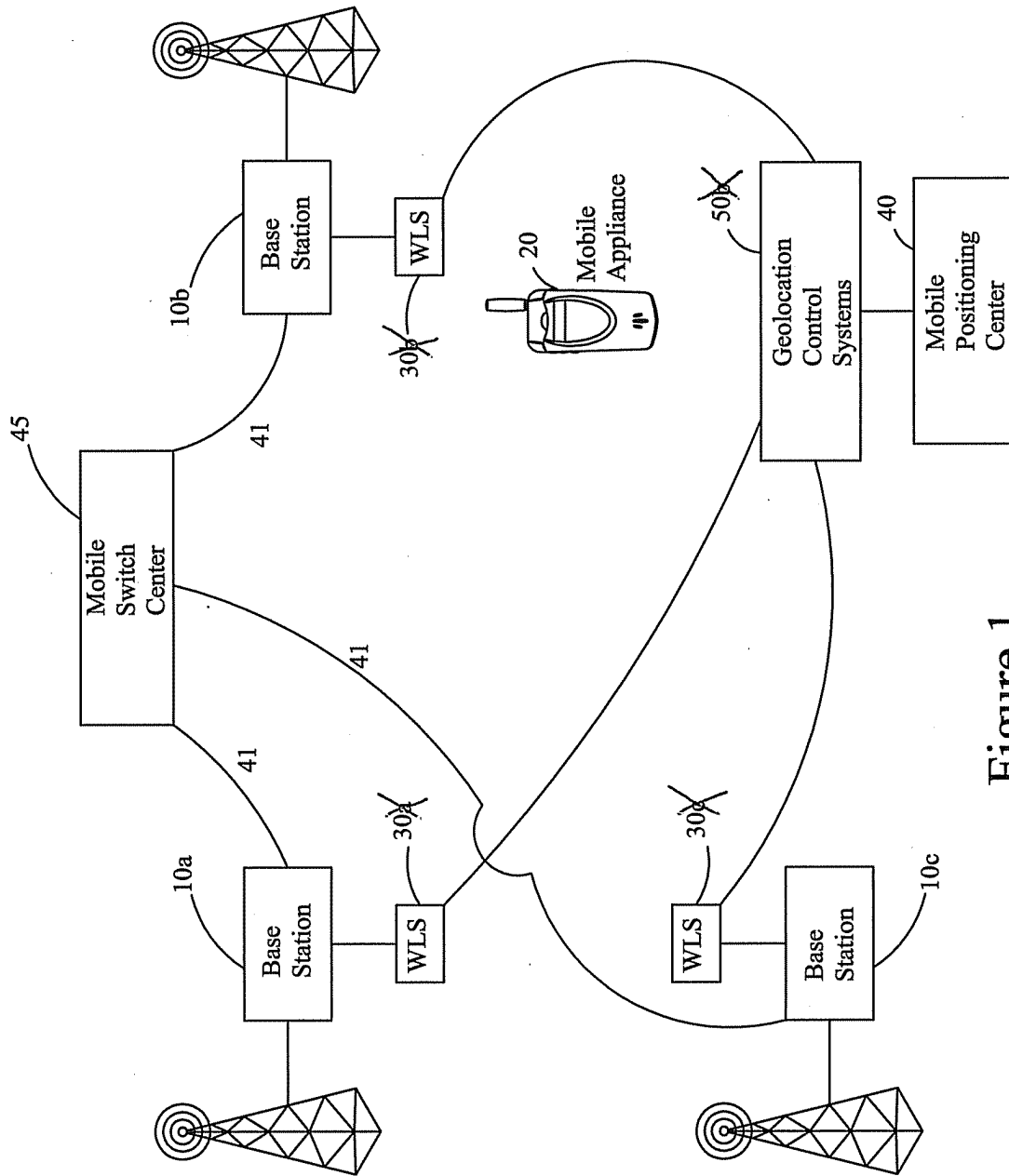


Figure 1
PRIOR ART